14332 - A Precision Measurement of the Mass of the Cepheid V350 Sgr

Cycle: 23, Proposal Category: GO

(UV Initiative)

(Availability Mode: AVAILABLE)

INVESTIGATORS

Name	*Institution*	*E-Mail*
Dr. Nancy Remage Evans (PI) (Contact)	**Smithsonian Institution Astrophysical Observatory**	**nevans@cfa.harvard.edu**
Dr. Charles R. Proffitt (CoI)	Space Telescope Science Institute	proffitt@stsci.edu
Dr. Kenneth G. Carpenter (CoI)	NASA Goddard Space Flight Center	kenneth.g.carpenter@nasa.gov
Dr. Natashya Gorynya (CoI)	Russian Academy of Sciences, Special Astrophysical Obs.	gorynya@sai.msu.ru
Dr. Alexey Rastorgouev (CoI)	Russian Academy of Sciences, Special Astrophysical Obs.	alex.rastorguev@gmail.com
Prof. Giuseppe Bono (CoI) (ESA Member)	Universita di Roma Tor Vergata	giuseppe.bono@roma2.infn.it
Ms. Laura Inno (CoI) (ESA Member)	Universita di Roma Tor Vergata	laura.inno@gmail.com

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) V350-SGR WAVE	STIS/CCD STIS/FUV-MAMA	3	29-Jul-2016 13:29:49.0	yes
02	(1) V350-SGR WAVE	STIS/CCD STIS/FUV-MAMA	3	29-Jul-2016 13:29:51.0	yes
03	(1) V350-SGR WAVE	STIS/CCD STIS/FUV-MAMA	3	29-Jul-2016 13:29:53.0	yes
04	(1) V350-SGR WAVE	STIS/CCD STIS/FUV-MAMA	3	29-Jul-2016 13:29:55.0	yes

12 Total Orbits Used

ABSTRACT

An important HST UV legacy is the measurement of the masses of Cepheids. HST has provided double-lined spectroscopic binaries since the orbital velocity amplitude of hot companions can be measured on high resolution ultraviolet spectra. STIS UV E140H echelle observations of the Cepheid V350 Sgr will yield a dramatic improvement in the precision of its mass (5% or 0.25 solar masses vs the current 17%). This will allow a unique and critical test of the role of convective overshoot in the evolution of intermediate mass stars, by coupling the measured mass with a luminosity. Furthermore, the very accurate masses (1-2%) recently determined for two Cepheids in eclipsing binaries in the LMC mean the mass--luminosity relation for Cepheids can be compared for two metallicities. This will improve both confidence in the use of Cepheids as primary extragalactic distance indicators and also our understanding of the evolution of intermediate mass stars.

OBSERVING DESCRIPTION

There are four identical visits of three orbits each.

Auto-wavecals will be turned off and replaced with deep wavecals at the beginning and end of each orbit. All but the first wavecal hide in the occultations and or guide-star re-acquisitions.

Other than the initial ACQ, the exposures for each orbit are put into a non-interruptable sequence to ensure that the wavecals stay close in time to each bracketed science exposure.

In each visit:

1st orbit

(1) Acquire target with 3s F28X52OIII ACQ exposure
(2) 3 s ACQ/PEAK with G430L and 0.2X0.09 aperture
(2) 50 s WAVE
(3) 1762 s E140H 1416
(4) 50 s WAVE

2nd and 3rd orbits

(1) 50 s WAVE
(2) 2970 s E140H 1416
(3) 50 s WAVE

--------- Additional Comments ----------

Notes to schedulers:

The STIS FUV detector background rate increases with time after detector HV turn-on. Since our target is rather faint, please SCHEDULE EACH VISIT AS THE FIRST FUV MAMA VISIT IN THAT DAY'S SAA FREE BLOCK, and START THE VISIT AS SOON AS POSSIBLE AFTER THAT DAY'S FUV HV RAMPUP. Please don't schedule any two of these visits in the same SAA free block as the second one will see enhanced detector background.

These observations will provide the final epoch of data for this program. They should occur between 20-Jun-2016 and 01-Oct-2016 to cover the required part of the long period orbit. All visits should be grouped within about five days.

Bright object screening:

The "unknown" objects reported by the BOT are just extra catalog entries for the target itself.

At FUV wavelengths, the SED is dominated by the companion, not the Cephied.
Adopted SED based on the large aperture, low dispersion IUE spectrum SWP44358 + LWR22766; other IUE spectra consistent.
Expect global rate of 157 c/s background + 82 c/s source for E140H, 1416, 0.2X0.09

ETC calculation STIS.sp.507182

Visit

Proposal 14332, 3 orbit visit 1 (01), implementation Fri Jul 29 17:29:56 GMT 2016

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: BETWEEN 20-JUN-2016 AND 01-OCT-2016; GROUP 01,02,03,04 WITHIN 5D

Comments: Note to schedulers: The STIS FUV detector background rate increases with time after detector HV turn-on. Since our target is rather faint (about 3-4X average background), please schedule each visit as the first FUV MAMA visit in that day's SAA free block of orbits, and start the visits as soon as possible after the HV is turned on for the day.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V350-SGR	RA: 18 45 17.4990 (281.3229125d)	Proper Motion RA: 1.40 mas/yr	V=7.47	Reference Frame: ICRS
	Alt Name1: HD173297	Dec: -20 38 50.57 (-20.64738d)	Proper Motion Dec: -4.40 mas/yr	FLAM(1417)=5e-14	
	Alt Name2: HIP92013	Equinox: J2000	Epoch of Position: 2000		

Comments: Coordinates are from Hipparcos, adjusted for proper motion to epoch 2000.

At FUV wavelengths, the SED is dominated by the ~ B9 or A0 companion, not the Cephied.

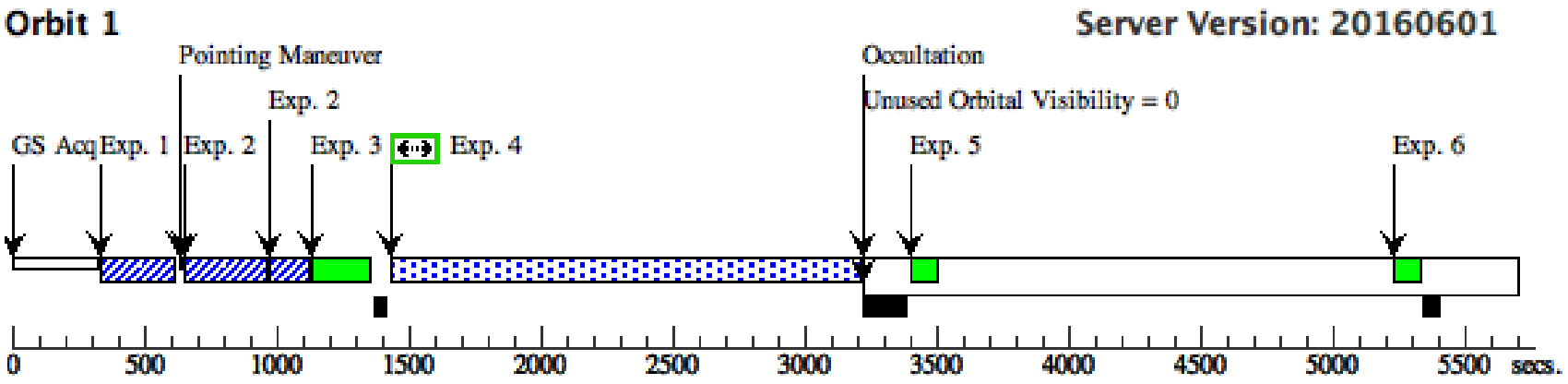
Our adopted SED is based on the large aperture, low dispersion IUE spectrum SWP44358 + LWR22766. A few other IUE spectra taken at different epochs are consistent with these, ruling out any large scale FUV variability.

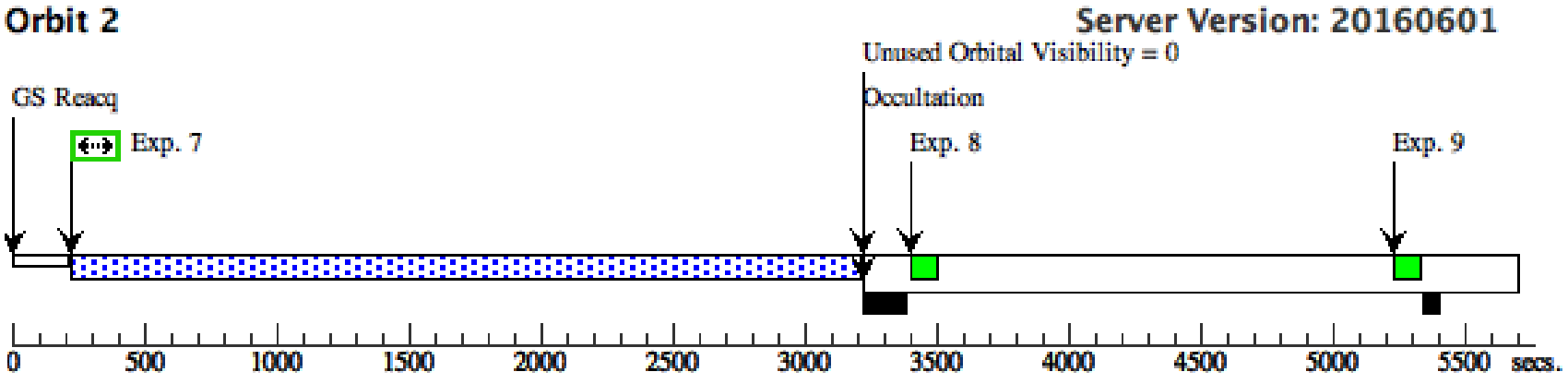
Expect global rate of 157 c/s background + 82 c/s source for E140H, 1416, 0.2X0.09; ETC ID STIS.sp.507182.

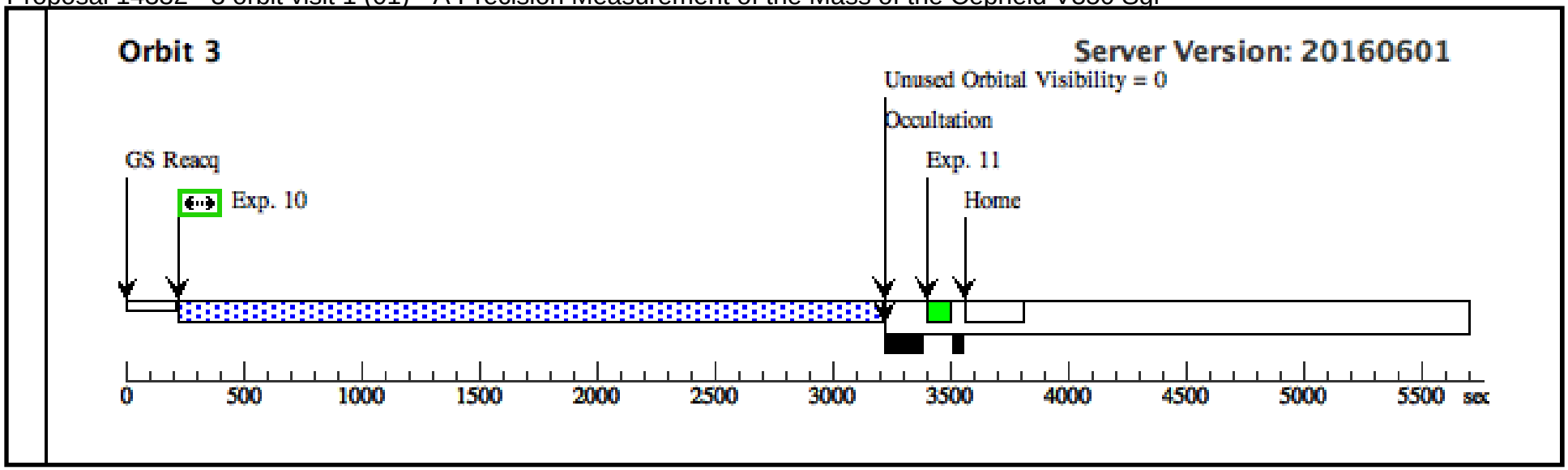
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (STIS.ta.512994)	(1) V350-SGR	STIS/CCD, ACQ, F28X50OIII	MIRROR				3 Secs (3 Secs) *[==>]*	***[1]***
2	acq/peak (STIS.sp.512995)	(1) V350-SGR	STIS/CCD, ACQ/PEAK, 0.2X0.09	G430L 4300 A			Sequence 2-5 Non-Int in 3 orbit visit 1 (01)	3 Secs (3 Secs) *[==>]*	***[1]***
Comments: Expect 1e7 e- per dwell point from the source									
3	wave before	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A			Sequence 2-5 Non-Int in 3 orbit visit 1 (01)	50 Secs (50 Secs) *[==>]*	***[1]***
4	E140H (STIS.sp.507182)	(1) V350-SGR	STIS/FUV-MAMA, TIME-TAG, 0.2X0.09	E140H 1416 A	WAVECAL=NO; BUFFER-TIME=881		Sequence 2-5 Non-Int in 3 orbit visit 1 (01)	1762 Secs (1762 Secs) *[==>]*	***[1]***
Comments: At FUV wavelengths, the SED is dominated by the companion, not the Cephied. *Adopted SED based on the large aperture, low dispersion IUE spectrum SWP44358 + LWR22766; other IUE spectra consistent.* *Expect global rate of 157 c/s background + 82 c/s source for E140H, 1416, 0.2X0.09*									
5	wave after	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A			Sequence 2-5 Non-Int in 3 orbit visit 1 (01)	50 Secs (50 Secs) *[==>]*	***[1]***
6	wave before	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A		NEW ALIGNMENT	Sequence 6-8 Non-Int in 3 orbit visit 1 (01)	50 Secs (50 Secs) *[==>]*	***[1]***
7	E140H (STIS.sp.507182)	(1) V350-SGR	STIS/FUV-MAMA, TIME-TAG, 0.2X0.09	E140H 1416 A	WAVECAL=NO; BUFFER-TIME=1485		Sequence 6-8 Non-Int in 3 orbit visit 1 (01)	2970 Secs (2970 Secs) *[==>]*	***[2]***
8	wave after	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A			Sequence 6-8 Non-Int in 3 orbit visit 1 (01)	50 Secs (50 Secs) *[==>]*	***[2]***
9	wave before	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A		NEW ALIGNMENT	Sequence 9-11 Non-Int in 3 orbit visit 1 (01)	50 Secs (50 Secs) *[==>]*	***[2]***
10	E140H (STIS.sp.507182)	(1) V350-SGR	STIS/FUV-MAMA, TIME-TAG, 0.2X0.09	E140H 1416 A	WAVECAL=NO; BUFFER-TIME=1485		Sequence 9-11 Non-Int in 3 orbit visit 1 (01)	2970 Secs (2970 Secs) *[==>]*	***[3]***
11	wave after	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A			Sequence 9-11 Non-Int in 3 orbit visit 1 (01)	50 Secs (50 Secs) *[==>]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20160601
Unused Orbital Visibility = 0
Occultation
GS Reacq
Exp. 10
Exp. 11
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14332, 3 orbit visit 2 (02), implementation Fri Jul 29 17:29:57 GMT 2016

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: BETWEEN 20-JUN-2016 AND 01-OCT-2016

Comments: Note to schedulers: The STIS FUV detector background rate increases with time after detector HV turn-on. Since our target is rather faint (about 3-4X average background), please schedule each visit as the first FUV MAMA visit in that day's SAA free block of orbits, and start the visits as soon as possible after the HV is turned on for the day.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V350-SGR	RA: 18 45 17.4990 (281.3229125d)	Proper Motion RA: 1.40 mas/yr	V=7.47	Reference Frame: ICRS
	Alt Name1: HD173297	Dec: -20 38 50.57 (-20.64738d)	Proper Motion Dec: -4.40 mas/yr	FLAM(1417)=5e-14	
	Alt Name2: HIP92013	Equinox: J2000	Epoch of Position: 2000		

Comments: Coordinates are from Hipparcos, adjusted for proper motion to epoch 2000.

At FUV wavelengths, the SED is dominated by the ~ B9 or A0 companion, not the Cephied.

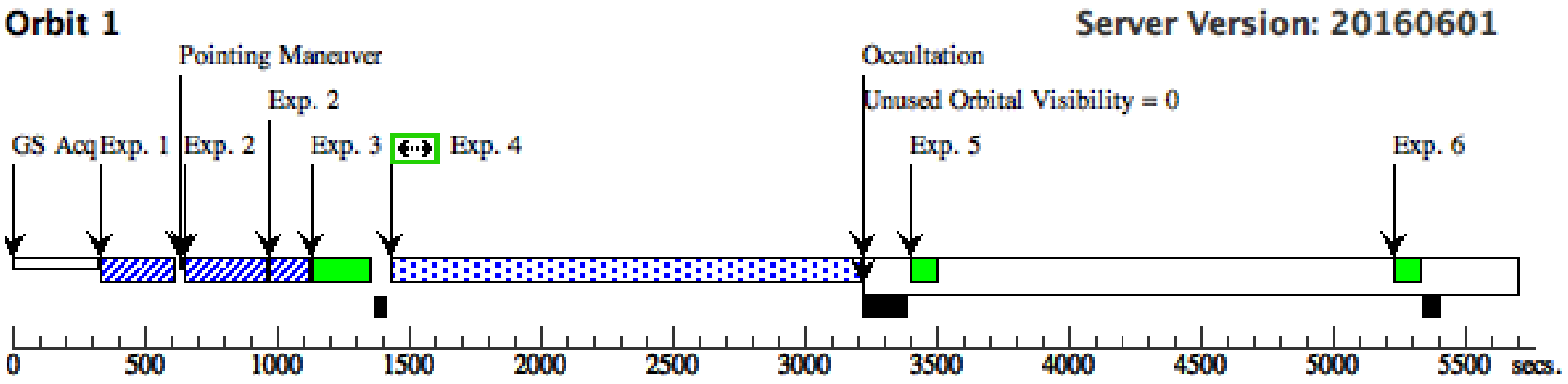
Our adopted SED is based on the large aperture, low dispersion IUE spectrum SWP44358 + LWR22766. A few other IUE spectra taken at different epochs are consistent with these, ruling out any large scale FUV variability.

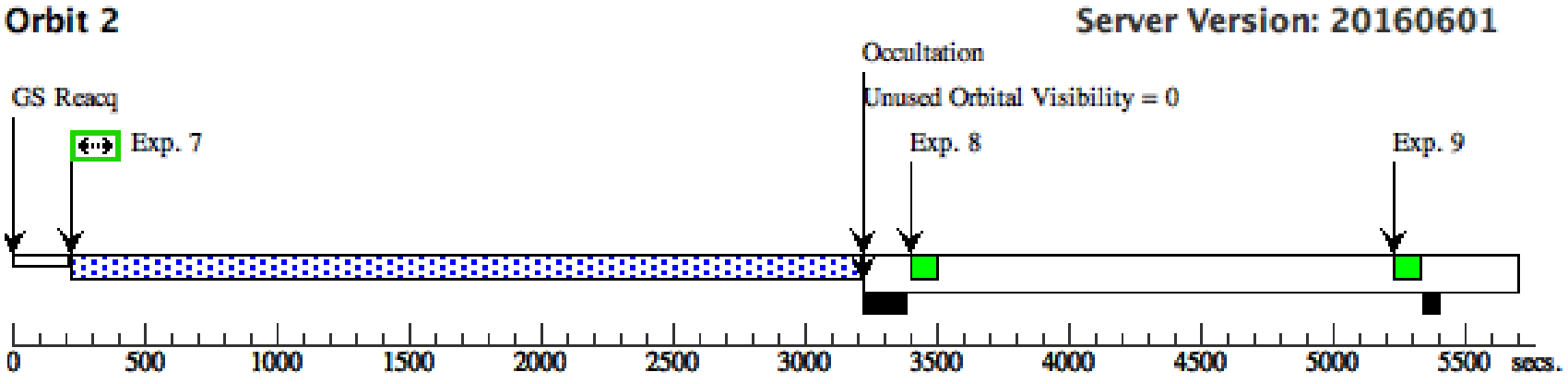
Expect global rate of 157 c/s background + 82 c/s source for E140H, 1416, 0.2X0.09; ETC ID STIS.sp.507182.

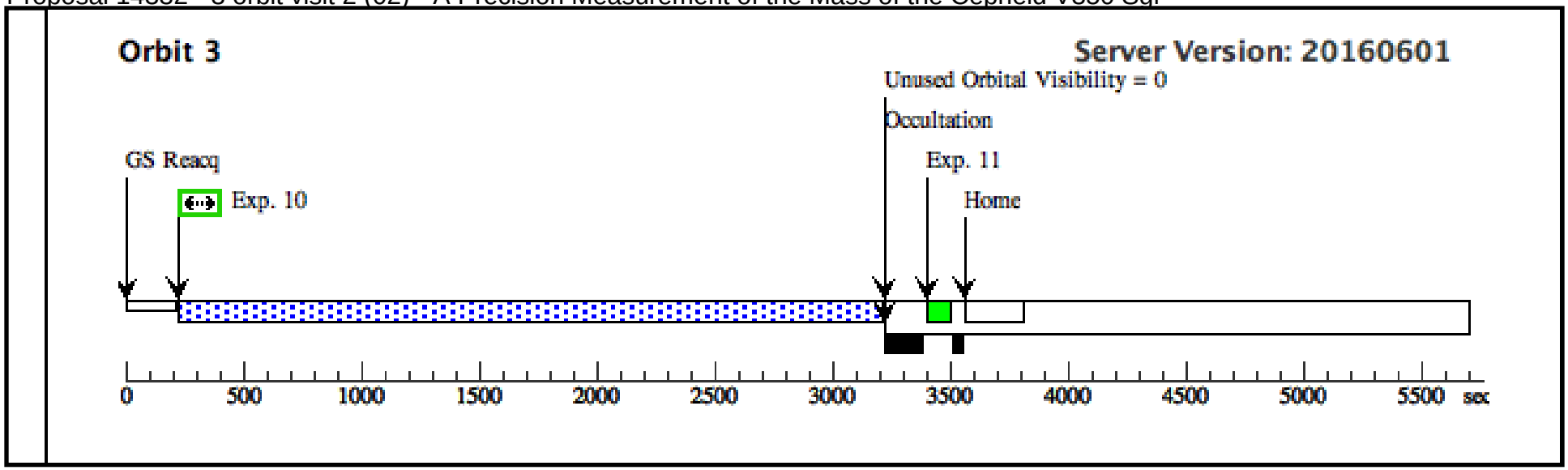
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (STIS.ta.512994)	(1) V350-SGR	STIS/CCD, ACQ, F28X50OIII	MIRROR				3 Secs (3 Secs) *[==>]*	***[1]***
2	acq/peak (STIS.sp.512995)	(1) V350-SGR	STIS/CCD, ACQ/PEAK, 0.2X0.09	G430L 4300 A			Sequence 2-5 Non-Int in 3 orbit visit 2 (02)	3 Secs (3 Secs) *[==>]*	***[1]***
Comments: Expect 1e7 e- per dwell point from the source									
3	wave before	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A			Sequence 2-5 Non-Int in 3 orbit visit 2 (02)	50 Secs (50 Secs) *[==>]*	***[1]***
4	E140H (STIS.sp.507182)	(1) V350-SGR	STIS/FUV-MAMA, TIME-TAG, 0.2X0.09	E140H 1416 A	WAVECAL=NO; BUFFER-TIME=881		Sequence 2-5 Non-Int in 3 orbit visit 2 (02)	1762 Secs (1762 Secs) *[==>]*	***[1]***
Comments: At FUV wavelengths, the SED is dominated by the companion, not the Cephied. *Adopted SED based on the large aperture, low dispersion IUE spectrum SWP44358 + LWR22766; other IUE spectra consistent.* *Expect global rate of 157 c/s background + 82 c/s source for E140H, 1416, 0.2X0.09*									
5	wave after	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A			Sequence 2-5 Non-Int in 3 orbit visit 2 (02)	50 Secs (50 Secs) *[==>]*	***[1]***
6	wave before	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A		NEW ALIGNMENT	Sequence 6-8 Non-Int in 3 orbit visit 2 (02)	50 Secs (50 Secs) *[==>]*	***[1]***
7	E140H (STIS.sp.507182)	(1) V350-SGR	STIS/FUV-MAMA, TIME-TAG, 0.2X0.09	E140H 1416 A	WAVECAL=NO; BUFFER-TIME=1485		Sequence 6-8 Non-Int in 3 orbit visit 2 (02)	2970 Secs (2970 Secs) *[==>]*	***[2]***
8	wave after	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A			Sequence 6-8 Non-Int in 3 orbit visit 2 (02)	50 Secs (50 Secs) *[==>]*	***[2]***
9	wave before	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A		NEW ALIGNMENT	Sequence 9-11 Non-Int in 3 orbit visit 2 (02)	50 Secs (50 Secs) *[==>]*	***[2]***
10	E140H (STIS.sp.507182)	(1) V350-SGR	STIS/FUV-MAMA, TIME-TAG, 0.2X0.09	E140H 1416 A	WAVECAL=NO; BUFFER-TIME=1485		Sequence 9-11 Non-Int in 3 orbit visit 2 (02)	2970 Secs (2970 Secs) *[==>]*	***[3]***
11	wave after	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A			Sequence 9-11 Non-Int in 3 orbit visit 2 (02)	50 Secs (50 Secs) *[==>]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20160601
Unused Orbital Visibility = 0
Occultation
GS Reacq
Exp. 10
Exp. 11
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14332, 3 orbit visit 3 (03), implementation Fri Jul 29 17:29:57 GMT 2016

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: BETWEEN 20-JUN-2016 AND 01-OCT-2016

Comments: Note to schedulers: The STIS FUV detector background rate increases with time after detector HV turn-on. Since our target is rather faint (about 3-4X average background), please schedule each visit as the first FUV MAMA visit in that day's SAA free block of orbits, and start the visits as soon as possible after the HV is turned on for the day.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V350-SGR	RA: 18 45 17.4990 (281.3229125d)	Proper Motion RA: 1.40 mas/yr	V=7.47	Reference Frame: ICRS
	Alt Name1: HD173297	Dec: -20 38 50.57 (-20.64738d)	Proper Motion Dec: -4.40 mas/yr	FLAM(1417)=5e-14	
	Alt Name2: HIP92013	Equinox: J2000	Epoch of Position: 2000		

Comments: Coordinates are from Hipparcos, adjusted for proper motion to epoch 2000.

At FUV wavelengths, the SED is dominated by the ~ B9 or A0 companion, not the Cephied.

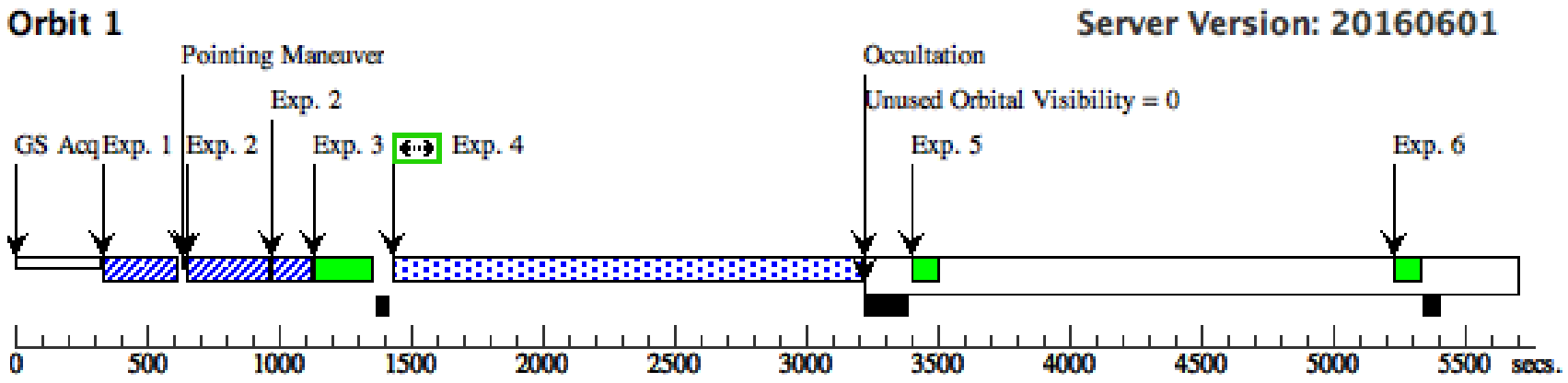
Our adopted SED is based on the large aperture, low dispersion IUE spectrum SWP44358 + LWR22766. A few other IUE spectra taken at different epochs are consistent with these, ruling out any large scale FUV variability.

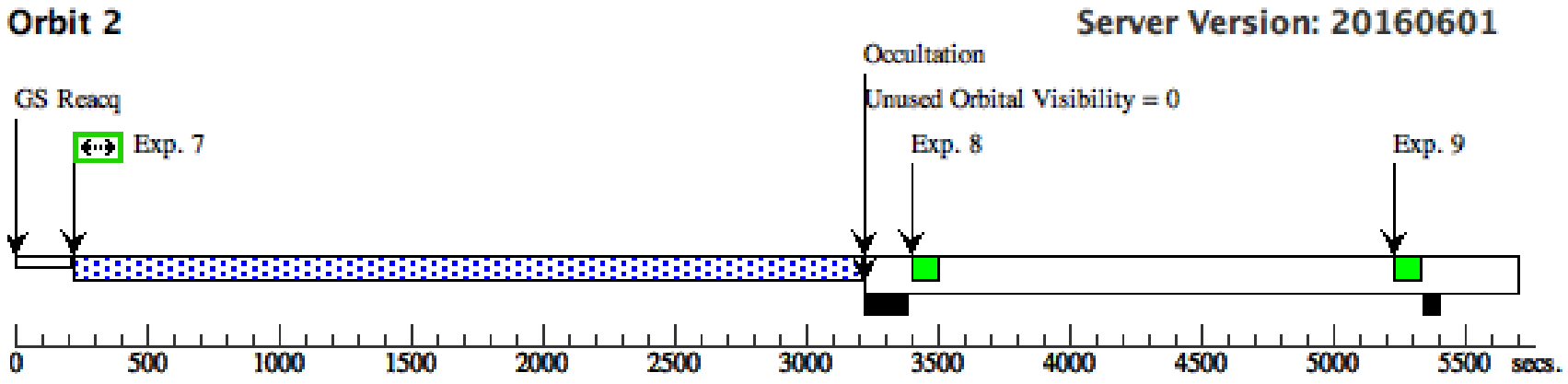
Expect global rate of 157 c/s background + 82 c/s source for E140H, 1416, 0.2X0.09; ETC ID STIS.sp.507182.

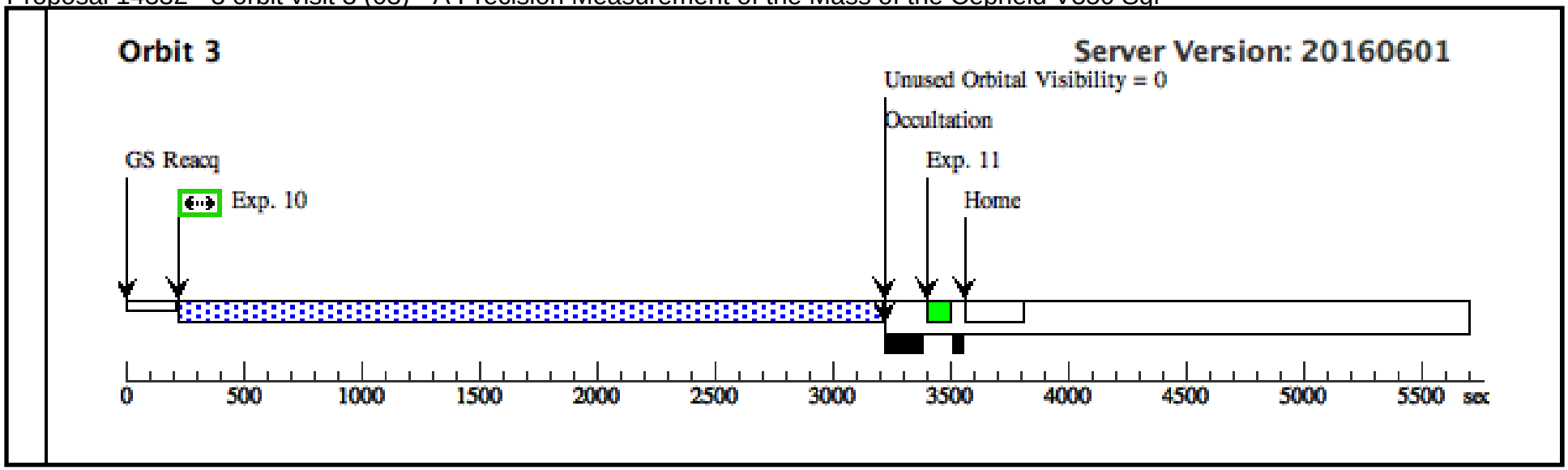
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (STIS.ta.512994)	(1) V350-SGR	STIS/CCD, ACQ, F28X50OIII	MIRROR				3 Secs (3 Secs) *[==>]*	***[1]***
2	acq/peak (STIS.sp.512995)	(1) V350-SGR	STIS/CCD, ACQ/PEAK, 0.2X0.09	G430L 4300 A			Sequence 2-5 Non-Int in 3 orbit visit 3 (03)	3 Secs (3 Secs) *[==>]*	***[1]***
Comments: Expect 1e7 e- per dwell point from the source									
3	wave before	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A			Sequence 2-5 Non-Int in 3 orbit visit 3 (03)	50 Secs (50 Secs) *[==>]*	***[1]***
4	E140H (STIS.sp.507182)	(1) V350-SGR	STIS/FUV-MAMA, TIME-TAG, 0.2X0.09	E140H 1416 A	WAVECAL=NO; BUFFER-TIME=881		Sequence 2-5 Non-Int in 3 orbit visit 3 (03)	1762 Secs (1762 Secs) *[==>]*	***[1]***
Comments: At FUV wavelengths, the SED is dominated by the companion, not the Cephied. *Adopted SED based on the large aperture, low dispersion IUE spectrum SWP44358 + LWR22766; other IUE spectra consistent.* *Expect global rate of 157 c/s background + 82 c/s source for E140H, 1416, 0.2X0.09*									
5	wave after	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A			Sequence 2-5 Non-Int in 3 orbit visit 3 (03)	50 Secs (50 Secs) *[==>]*	***[1]***
6	wave before	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A		NEW ALIGNMENT	Sequence 6-8 Non-Int in 3 orbit visit 3 (03)	50 Secs (50 Secs) *[==>]*	***[1]***
7	E140H (STIS.sp.507182)	(1) V350-SGR	STIS/FUV-MAMA, TIME-TAG, 0.2X0.09	E140H 1416 A	WAVECAL=NO; BUFFER-TIME=1485		Sequence 6-8 Non-Int in 3 orbit visit 3 (03)	2970 Secs (2970 Secs) *[==>]*	***[2]***
8	wave after	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A			Sequence 6-8 Non-Int in 3 orbit visit 3 (03)	50 Secs (50 Secs) *[==>]*	***[2]***
9	wave before	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A		NEW ALIGNMENT	Sequence 9-11 Non-Int in 3 orbit visit 3 (03)	50 Secs (50 Secs) *[==>]*	***[2]***
10	E140H (STIS.sp.507182)	(1) V350-SGR	STIS/FUV-MAMA, TIME-TAG, 0.2X0.09	E140H 1416 A	WAVECAL=NO; BUFFER-TIME=1485		Sequence 9-11 Non-Int in 3 orbit visit 3 (03)	2970 Secs (2970 Secs) *[==>]*	***[3]***
11	wave after	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A			Sequence 9-11 Non-Int in 3 orbit visit 3 (03)	50 Secs (50 Secs) *[==>]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20160601
Unused Orbital Visibility = 0
Occultation
GS Reacq
Exp. 10
Exp. 11
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14332, 3 orbit visit 4 (04), implementation Fri Jul 29 17:29:57 GMT 2016

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: BETWEEN 20-JUN-2016 AND 01-OCT-2016

Comments: Note to schedulers: The STIS FUV detector background rate increases with time after detector HV turn-on. Since our target is rather faint (about 3-4X average background), please schedule each visit as the first FUV MAMA visit in that day's SAA free block of orbits, and start the visits as soon as possible after the HV is turned on for the day.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V350-SGR	RA: 18 45 17.4990 (281.3229125d)	Proper Motion RA: 1.40 mas/yr	V=7.47	Reference Frame: ICRS
	Alt Name1: HD173297	Dec: -20 38 50.57 (-20.64738d)	Proper Motion Dec: -4.40 mas/yr	FLAM(1417)=5e-14	
	Alt Name2: HIP92013	Equinox: J2000	Epoch of Position: 2000		

Comments: Coordinates are from Hipparcos, adjusted for proper motion to epoch 2000.

At FUV wavelengths, the SED is dominated by the ~ B9 or A0 companion, not the Cephied.

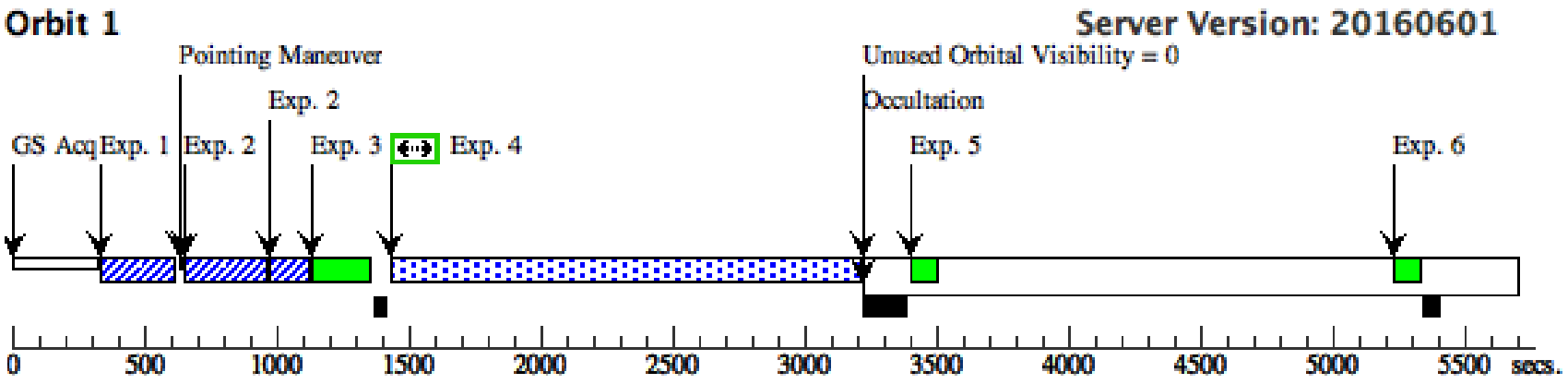
Our adopted SED is based on the large aperture, low dispersion IUE spectrum SWP44358 + LWR22766. A few other IUE spectra taken at different epochs are consistent with these, ruling out any large scale FUV variability.

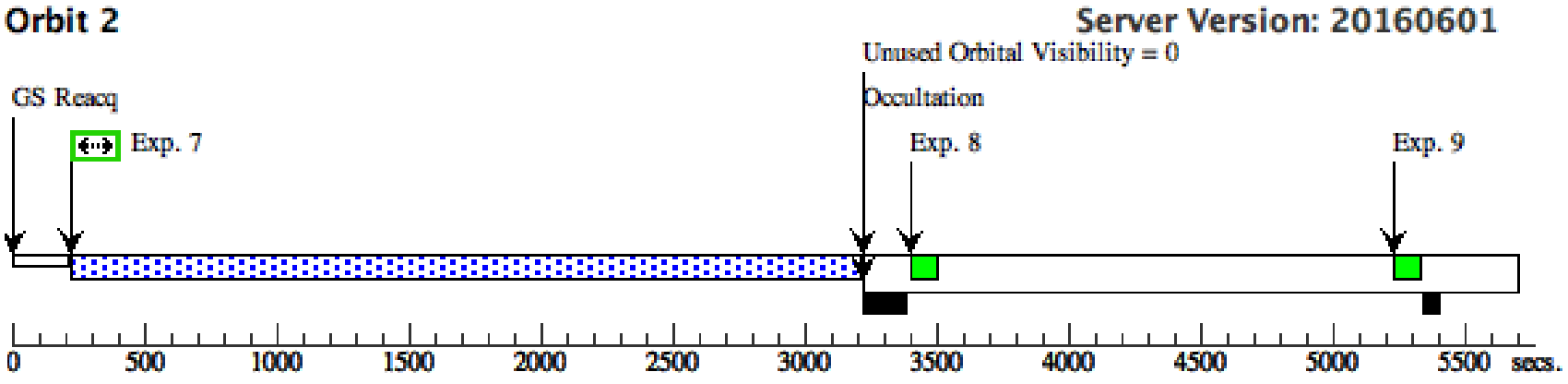
Expect global rate of 157 c/s background + 82 c/s source for E140H, 1416, 0.2X0.09; ETC ID STIS.sp.507182.

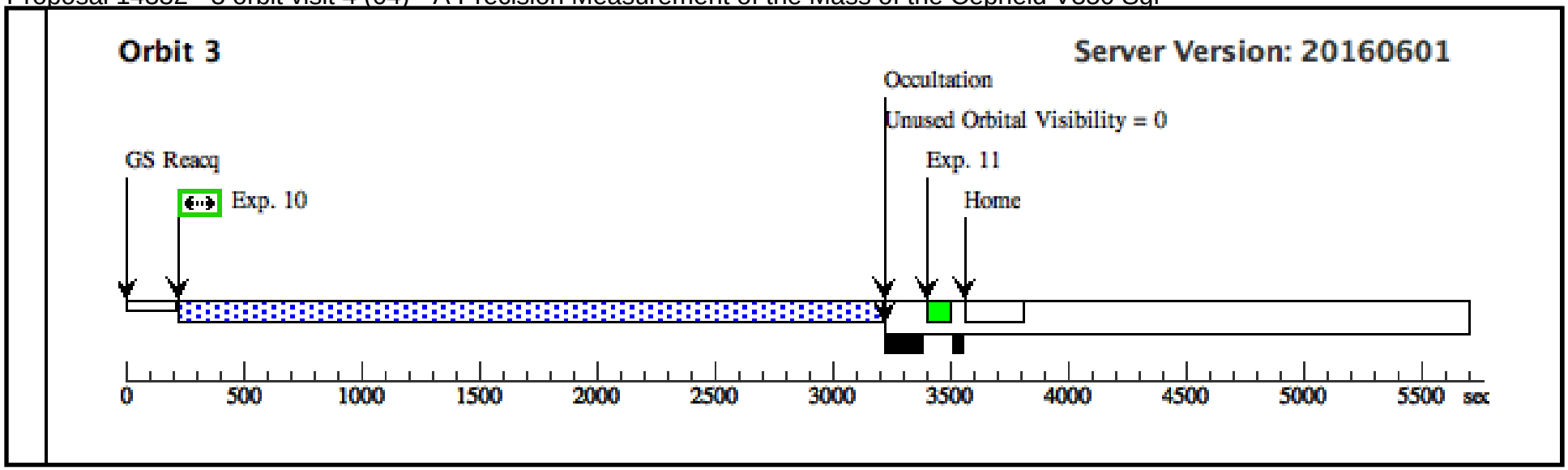
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (STIS.ta.512994)	(1) V350-SGR	STIS/CCD, ACQ, F28X50OIII	MIRROR				3 Secs (3 Secs) *[==>]*	*[1]*
2	acq/peak (STIS.sp.512995)	(1) V350-SGR	STIS/CCD, ACQ/PEAK, 0.2X0.09	G430L 4300 A			Sequence 2-5 Non-Int in 3 orbit visit 4 (04)	3 Secs (3 Secs) *[==>]*	*[1]*
Comments: Expect 1e7 e- per dwell point from the source									
3	wave before	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A			Sequence 2-5 Non-Int in 3 orbit visit 4 (04)	50 Secs (50 Secs) *[==>]*	*[1]*
4	E140H (STIS.sp.507182)	(1) V350-SGR	STIS/FUV-MAMA, TIME-TAG, 0.2X0.09	E140H 1416 A	WAVECAL=NO; BUFFER-TIME=881		Sequence 2-5 Non-Int in 3 orbit visit 4 (04)	1762 Secs (1762 Secs) *[==>]*	*[1]*
Comments: At FUV wavelengths, the SED is dominated by the companion, not the Cephied. *Adopted SED based on the large aperture, low dispersion IUE spectrum SWP44358 + LWR22766; other IUE spectra consistent.* *Expect global rate of 157 c/s background + 82 c/s source for E140H, 1416, 0.2X0.09*									
5	wave after	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A			Sequence 2-5 Non-Int in 3 orbit visit 4 (04)	50 Secs (50 Secs) *[==>]*	*[1]*
6	wave before	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A		NEW ALIGNMENT	Sequence 6-8 Non-Int in 3 orbit visit 4 (04)	50 Secs (50 Secs) *[==>]*	*[1]*
7	E140H (STIS.sp.507182)	(1) V350-SGR	STIS/FUV-MAMA, TIME-TAG, 0.2X0.09	E140H 1416 A	WAVECAL=NO; BUFFER-TIME=1485		Sequence 6-8 Non-Int in 3 orbit visit 4 (04)	2970 Secs (2970 Secs) *[==>]*	*[2]*
8	wave after	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A			Sequence 6-8 Non-Int in 3 orbit visit 4 (04)	50 Secs (50 Secs) *[==>]*	*[2]*
9	wave before	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A		NEW ALIGNMENT	Sequence 9-11 Non-Int in 3 orbit visit 4 (04)	50 Secs (50 Secs) *[==>]*	*[2]*
10	E140H (STIS.sp.507182)	(1) V350-SGR	STIS/FUV-MAMA, TIME-TAG, 0.2X0.09	E140H 1416 A	WAVECAL=NO; BUFFER-TIME=1485		Sequence 9-11 Non-Int in 3 orbit visit 4 (04)	2970 Secs (2970 Secs) *[==>]*	*[3]*
11	wave after	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.09	E140H 1416 A			Sequence 9-11 Non-Int in 3 orbit visit 4 (04)	50 Secs (50 Secs) *[==>]*	*[3]*

Orbit Structure






Orbit 3
Server Version: 20160601
Occultation
Unused Orbital Visibility = 0
GS Reacq
Exp. 10
Exp. 11
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec